

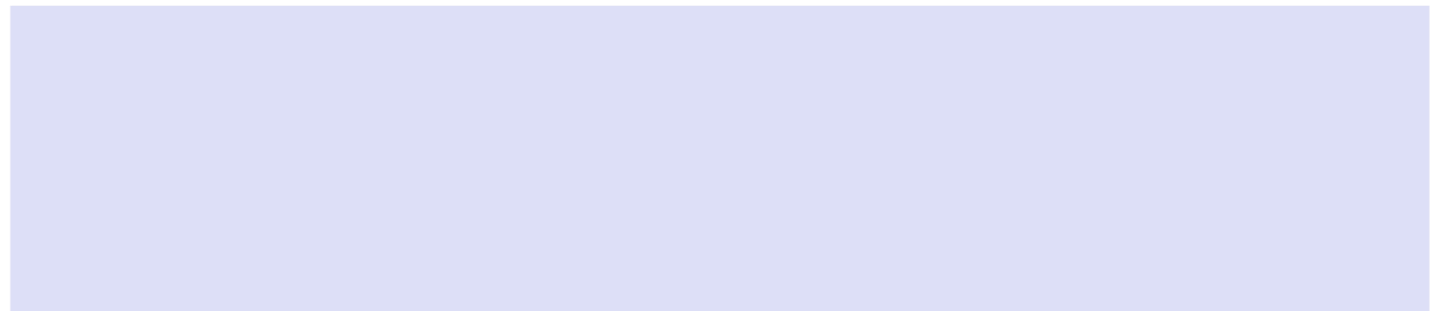


# QEEG Clinical Report

BrainLens V0.4

کلینیک نوروتراپی و  
روانپزشکی دکتر حسینی

## Report Description



## Personal & Clinical Data

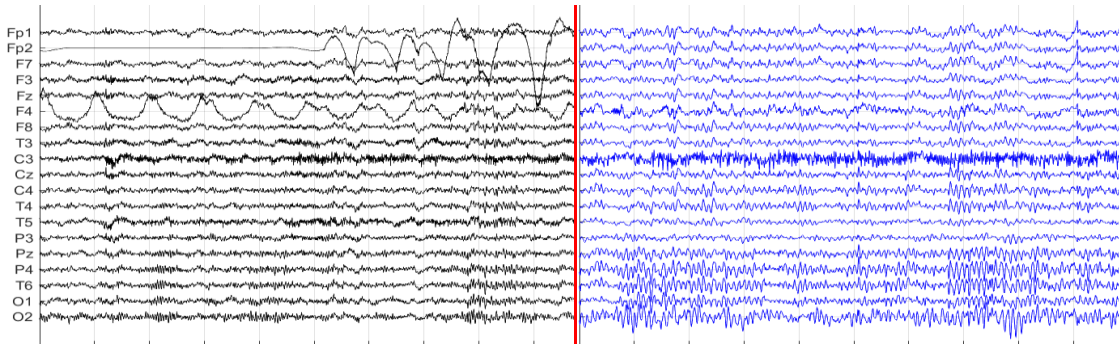
Name	Hassan Hosseiniyanrostami	Date of Recording	05-May-2024
Date of Birth - Age	21-Mar-1997 - 27.12	Gender	Male
Handedness(R/L)	Right	Source of Referral	Dr Hosseini
Initial Diagnosis	Depression-Anxiety-OCD		
Current Medication	Fluvoxamine-Sertraline		

Dr Hosseini

## Denosing Information (EC)

Raw EEG

Denosed EEG



Flat Channels

Rejected Channels

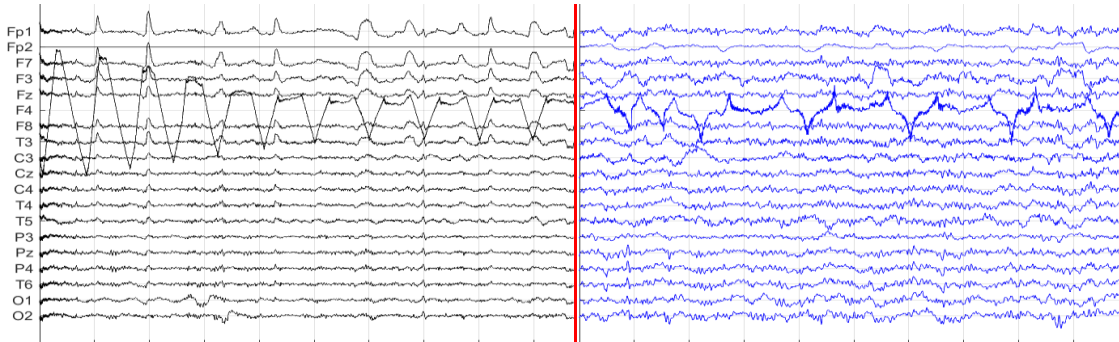


Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	12	Muscle	0		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		good		Total Recording Time Remaining	225.22 sec

## Denosing Information (EO)

Raw EEG

Denosed EEG



Flat Channels

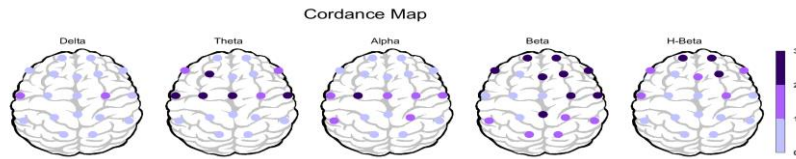
Rejected Channels



Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	2	Muscle	0		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		good		Total Recording Time Remaining	240.47 sec

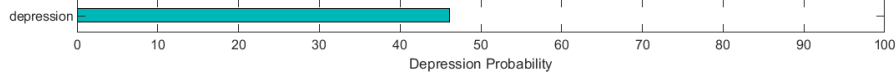
# Pathological assessment for mood disorders

## Compare to Mood Disorders Database



## EEG Compatibility with Depression Diagnosis

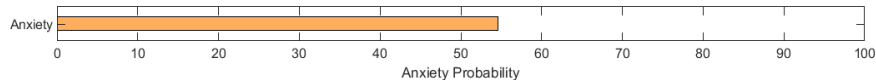
Depression Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Increased Global rAlpha	0.50	global	0.00	NAN
Increased global rTheta	0.00	NAN	0.50	global
Decreased rDelta	-0.50	P-O-	0.00	NAN
Increased rBeta	0.50	LT	0.00	NAN
Left FAA	-0.23	Left FAA	0.00	NAN
Right OAA	0.00	NAN	0.00	NAN
Decreased Coherence (D, T)	-0.50	Decreased Coherence	0.00	NAN
Increased Coherence (A, B)	1.00	Increased Coherence	0.00	NAN



Depression Probability

## EEG Compatibility with Anxiety Diagnosis

Anxiety Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	0.00	NAN	-0.50	LF-RF-MF-RT-
Increased rBeta	0.50	LT	0.00	NAN
Right FAA	0.00	NAN	0.05	Right FAA
Left OAA	-0.55	Left OAA	-0.19	Left OAA
Increased IAF > 10.6	0.38	Increased IAF	0.00	NAN



Anxiety Probability

## EEG Compatibility with Mood Swings Diagnosis \*

Mood Swings Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	0.00	NAN	-0.50	LF-RF-MF-RT-
Increased (rDelta+rTheta)	0.00	NAN	0.50	LF-RF-MF-LT-RT-C-P-O-
Increased rBeta	0.50	LT	0.00	NAN
Decreased Alpha Coherence	0.00	NAN	0.00	NAN
Right FAA	0.00	NAN	0.05	Right FAA

Mood Swings Probability

\* This index can only be investigated if there are symptoms of mood swings (R/O BMD or R/O mood swings).

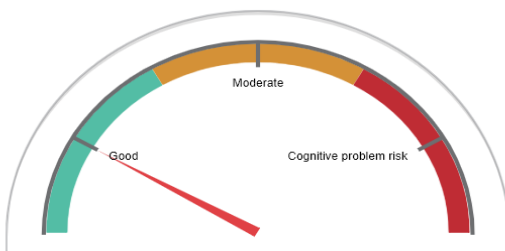
### Depression Severity



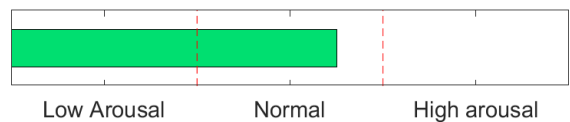
### Anxiety Severity



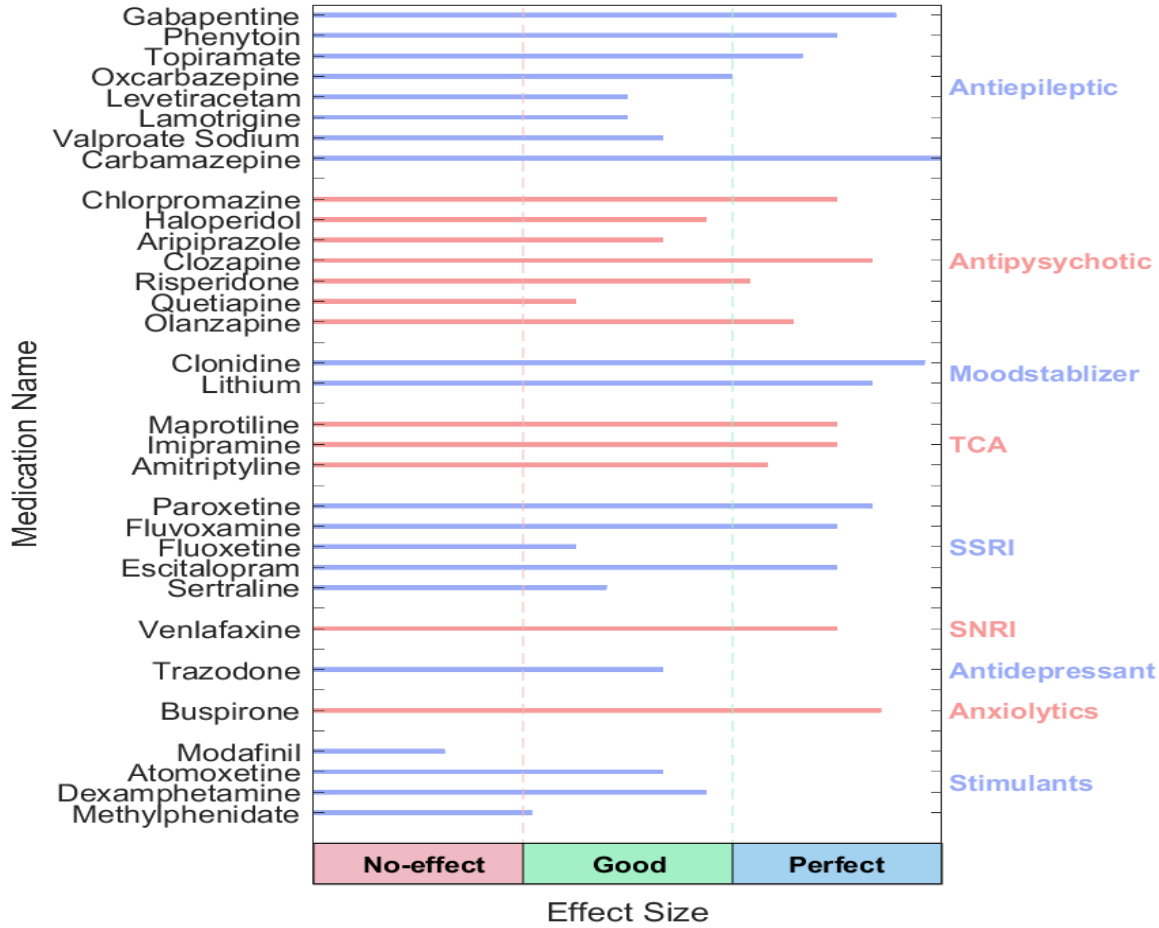
### Cognitive Functions



### Arousal Level Detection



## QEEG based predicting medication response



## Explanation

These two tables can be considered the most important finding that can be extracted from QEEG. To prepare this list, the NPCIndex Article Review Team has studied, categorized, and extracted algorithms from many authoritative published articles on predict medication response and Pharmac EEG studies. These articles are published between 1970 and 2021. The findings extracted from this set include 85 different factors in the raw band domains, spectrum, power, coherence, and loreta that have not been segregated to avoid complexity, and their results are shown in these diagrams. One can review details in NPCIndex.com .

## ⚠ Medication Recommendation

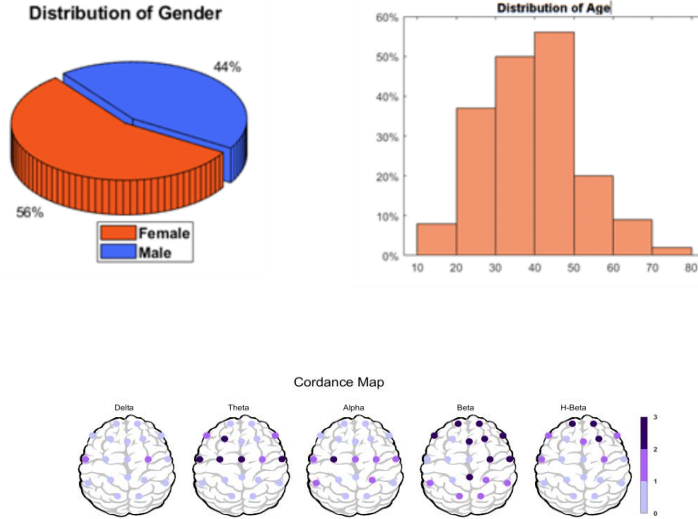
These two charts, calculate response probability to various medications, according only to QEEG indicators. Blue charts favor drug response and red charts favor drug resistance. The longer the bar, the more evidence there is in the articles. Only drugs listed in the articles are listed. These tables present the indicators reviewed in the QEEG studies and are not a substitute for physician selection.

## rTMS Response Prediction

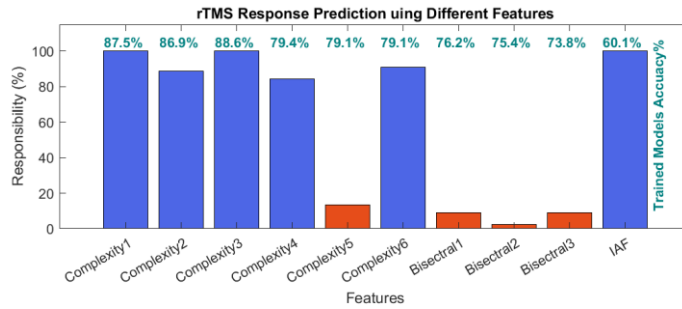
### Network Performance

**Accuracy: 92.1%**  
**Sensitivity: 89.13%**  
**Specificity: 97.47%**

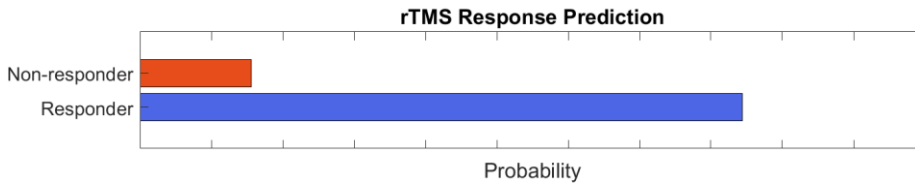
### Participants Information



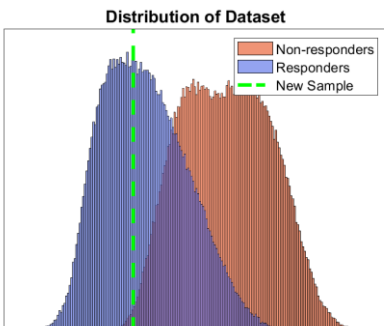
### Features Information



### Responsibility



### Data Distribution

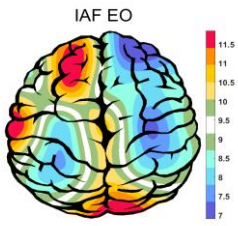


### About Predicting rTMS Response

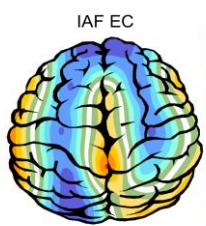
This index was obtained based on machine learning approaches and by examining the QEEG biomarkers of more than 470 cases treated with rTMS. The cases were diagnosed with depression (with and without comorbidity) and all were medication free. By examining more than 40 biomarkers capable of predicting response to rTMS treatment in previous studies and with data analysis, finally 10 biomarkers including bispectral and nonlinear features entered the machine learning process. The final chart can distinguish between rTMS responsive and resistant cases with 92.1% accuracy. This difference rate is much higher than the average response to treatment of 44%, in the selection of patients with clinical criteria, and is an important finding in the direction of personalized treatment for rTMS.

### IAF(EO)

### IAF(EC)

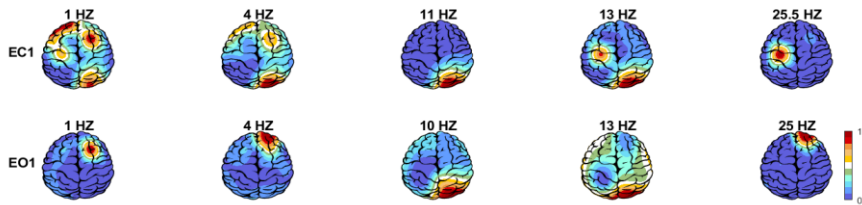
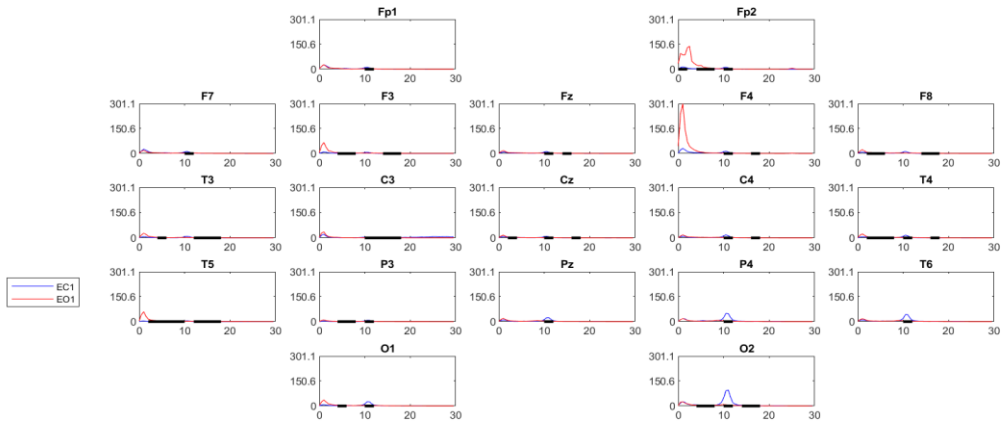


Eye Open IAF= 10.50



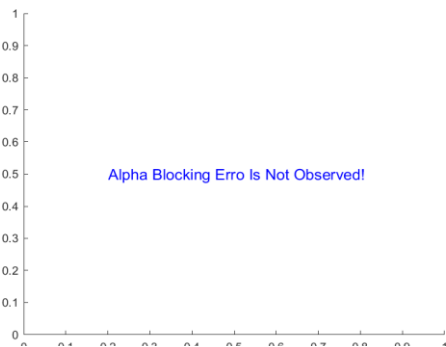
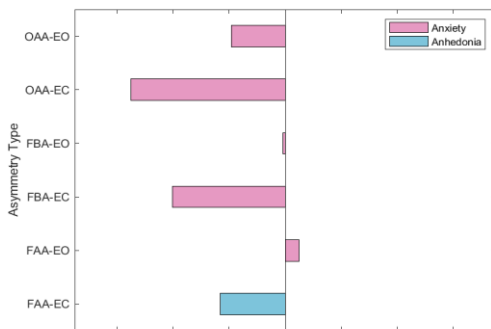
Eye Close IAF= 10.88

### EEG Spectra



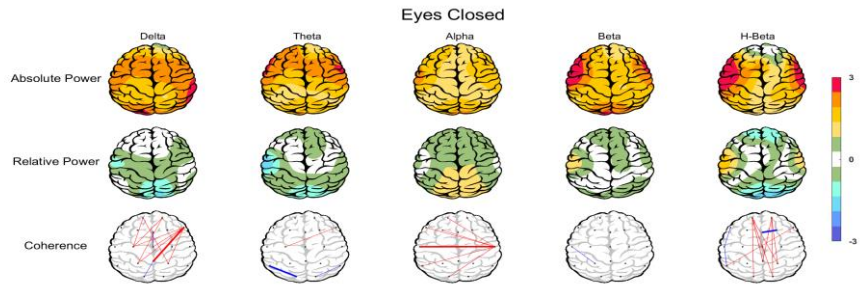
### Alpha Asymmetry(AA)

### Alpha Blocking

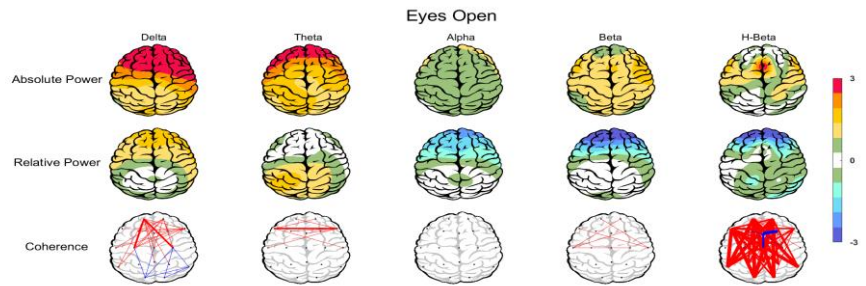




Z Score Summary Information (EC)



Z Score Summary Information (EO)



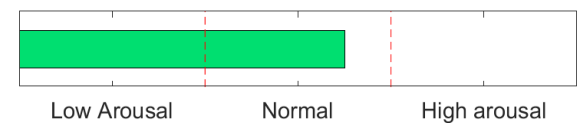
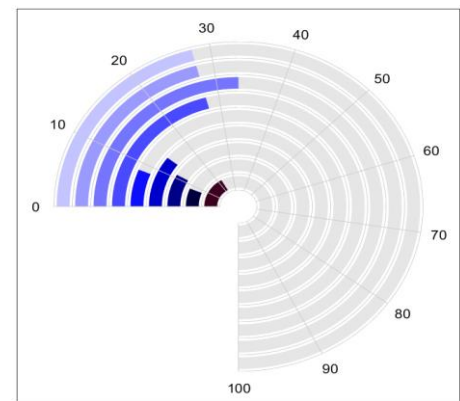
E.C.T/B Ratio ( Raw- Z Score)



E.O.T/B Ratio ( Raw- Z Score)



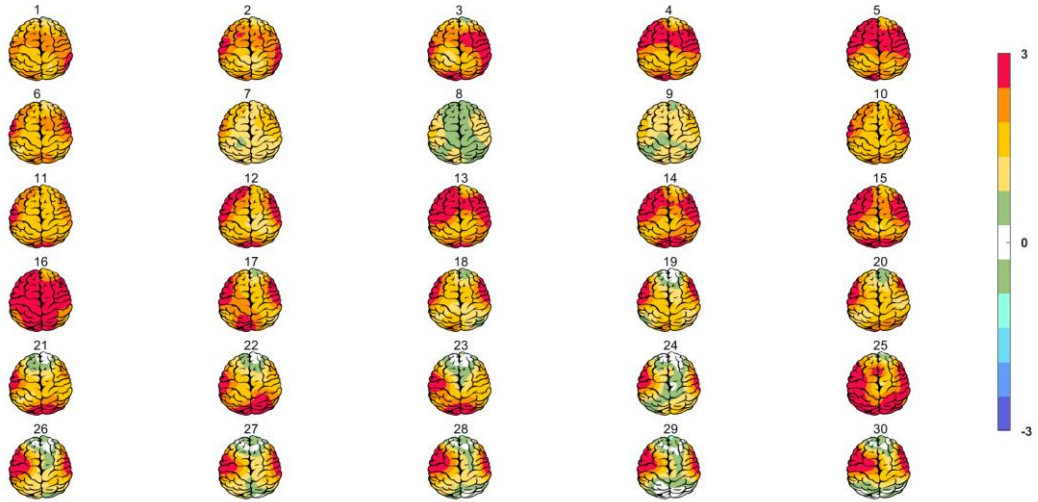
Arousal Level





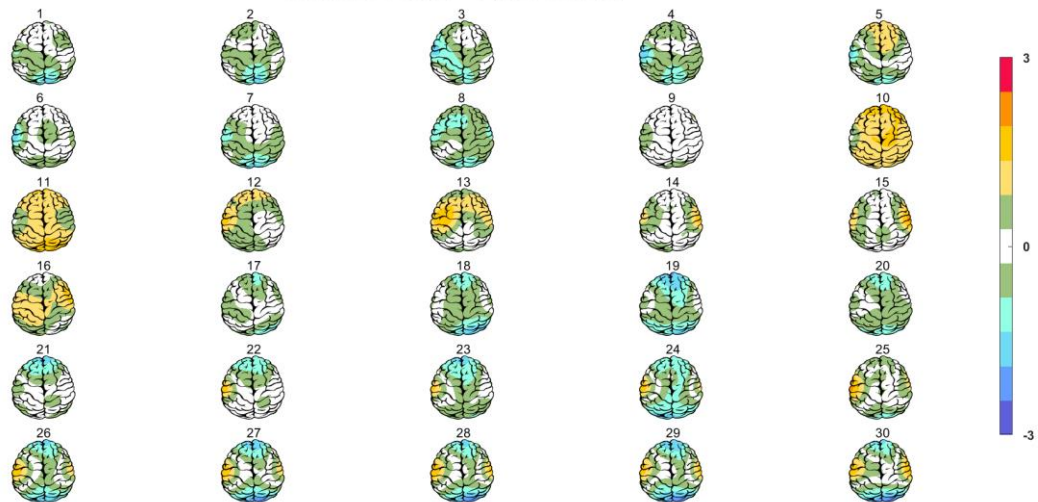
**Absolute Power-Eye Closed (EC)**

Absolute power - Eyes Closed



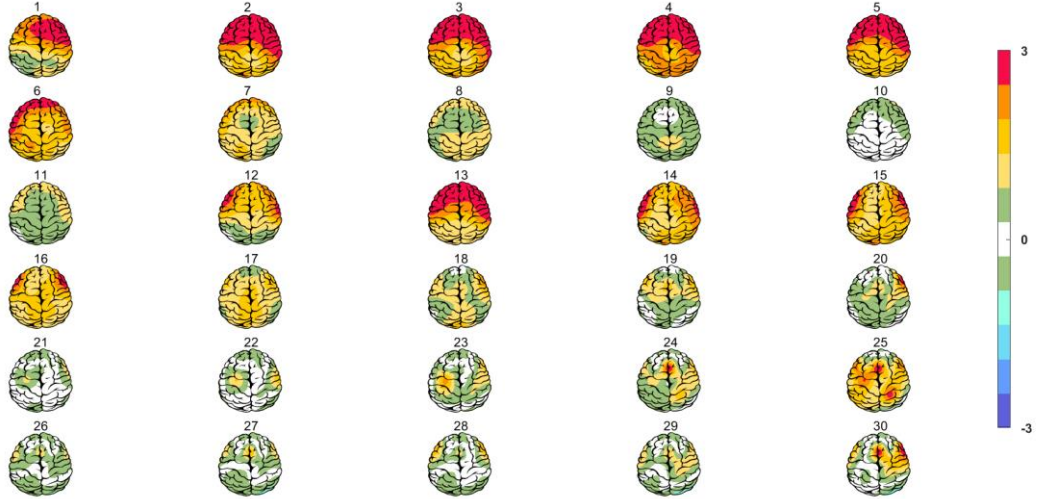
**Relative Power-Eye Closed (EC)**

Relative Power - Eyes Closed



**Absolute Power-Eye Open (EO)** 

Absolute power - Eyes Open



**Relative Power-Eye Open (EO)** 

Relative Power - Eyes Open

